



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/662,109	09/12/2003	Amod A. Ogale	CLM-15	9098

29698 7590 11/03/2005

LEIGH P. GREGORY
ATTORNEY AT LAW
PO BOX 168
CLEMSON, SC 29633-0168

EXAMINER

KOPEC, MARK T

ART UNIT	PAPER NUMBER
----------	--------------

1751

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/662,109

Applicant(s)

OGALE ET AL.

Examiner

Mark Kopec

Art Unit

1751

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 1751

Applicant's election without traverse of Group I (claims 1-5) in the reply filed on 8/17/05 is acknowledged.

The examiner has determined priority as follows:

Claims 1 and 3-5 are accorded a priority date of 9/12/03 (the filing date of the instant application). Claim 2 is accorded a priority date of 9/12/02 (the filing date of 60/410,231). 60/410,231 does not support the instant limitation "...about 0.01 percent" (claims 1 and 3-5).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1751

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 1751

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(a) as being anticipated by Cho et al (Carbon 2003).

Cho is available as prior art "to another". The reference discloses the claimed invention (see Abstract; Experimental).

The reference is anticipatory.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Andrews et al (Applied Physica Lett; Nanotube composite fibers).

Andrews et al discloses composite fibers made by dispersing SWNT in isotropic petroleum pitch (1 wt%), and subsequently carbonized (Abstract and pages 1329-1331).

Although the reference discloses addition of nanotubes to isotropic pitch (as opposed to mesophase pitch), the resultant carbonized products would be identical. Specifically, the subsequent carbonation heat treatment would result in identical microstructure.

Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product

Art Unit: 1751

and the prior art product. In re Marosi, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

The reference is anticipatory.

With respect to the 103 obviousness rejection, Andrews clearly teaches:

...While it is obviously of interest to see how the properties of high performance mesophase pitch fibers could be modified by nanotube addition, we have limited the present research to investigating the properties of the relatively much weaker carbon fibers that are obtained by spinning isotropic pitch (emphasis added).

As stated above, the examiner believes that Andrews "high performance" vs. "much weaker carbon fibers" refers to spun fibers before carbonization. The examiner maintains that the subsequent carbonation heat treatment would result in identical microstructures of isotropic and anisotropic fiber starting materials. In any event, the reference clearly renders obvious the addition of nanotubes to mesophase starting materials.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Klett et al (6,491,891) or Stiller et al (6,183,854).

Klett et al disclose method for molding complex and intricately shaped high density monolithic carbon, carbon-carbon, graphite, and thermoplastic composites using gelcasting technology. The method comprising a polymeric carbon precursor,

Art Unit: 1751

a solvent, a dispersant, an anti-foaming agent, a monomer system, and an initiator system. The components are combined to form a suspension which is poured into a mold and heat-treated to form a thermoplastic part. The thermoplastic part can then be further densified and heat-treated to produce a high density carbon or graphite composite. The present invention also discloses the products derived from this method (Abstract). The reference specifically discloses the use of mesophase pitch and carbon nanotube/mesobead additives (Col 5, lines 24-35; Col 5, lines 45-48; Example 2).

Stiller et al disclose method of making an anisotropic or isotropic carbon foam include introducing at least one reinforcing additive which may be carbon nanofibers, carbon nanotubes, chopped graphite fibers, crushed green coke, crushed calcined coke or combinations thereof during the process of manufacturing the carbon foam to enhance selected strength properties of the resultant foam. A resultant product is also disclosed (Abstract). The reference specifically discloses the use of mesophase (anisotropic) pitch and carbon nanotube/nanofiber additives (Col 2, lines 18-37; Col 3, lines 12-20).

Art Unit: 1751

While each reference teaches resultant molded or formed products or structural materials, the references fails to specify the claimed "fiber" structure.

The examiner respectfully submits that the skilled artisan would have found the claimed "fiber" an obvious resultant structure in view of the prior art. The formation of fibers from pitch materials is well known in the art. In fact, applicant acknowledges such at page 1 of the instant specification (Background of the Invention).

In view of the foregoing, the above claims have failed to patentably distinguish over the applied art.

The remaining references listed on forms 892 and 1449 have been reviewed by the examiner and are considered to be cumulative to or less material than the prior art references relied upon in the rejection above.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Kopec whose telephone number is (571) 272-1319. The examiner can normally be reached on Monday - Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on (571) 272-1316. The fax phone number for the

Art Unit: 1751

organization where this application or proceeding is assigned is
571-273-8300.

Information regarding the status of an application may be
obtained from the Patent Application Information Retrieval
(PAIR) system. Status information for published applications
may be obtained from either Private PAIR or Public PAIR. Status
information for unpublished applications is available through
Private PAIR only. For more information about the PAIR system,
see <http://pair-direct.uspto.gov>. Should you have questions on
access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free).


Mark Kopec
Primary Examiner
Art Unit 1751

MK
October 28, 2005